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## Sea Surface Temperature Analysis Using Blended Infrared and Microwave Satellite Measurements

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Present operational sea surface temperature (SST) analysis products rely on satellite-borne infrared instruments to provide accurate measurements over most of the global ocean. A disadvantage of the infrared instruments is that they cannot observe the ocean surface through clouds. Microwave instruments like the Advanced Microwave Scanning Radiometer for Eos (AMSR-E) carried on the NASA Aqua satellite allow for the retrieval of SST measurements under cloud cover, but the microwave measurements have observation and error characteristics that are different from the infrared observations.

A set of simple optimal interpolation SST reanalyses was performed for the western North Atlantic for July-September 2003, using infrared-only and blended infrared-microwave SST measurements. The addition of the microwave SST observations reduced the mean error and root-mean-square error of the analysis measured against unassimilated in situ SST measurements from ships and drifting buoys. The impact of the additional observations on the SST analysis and on derived estimates of upper ocean heat content in the vicinity of tropical storms was evaluated for a sample of Atlantic storms during the experiment.